connectors with more than eight pins. The latter connectors are also available from the same source.

While the invention has been described herein in terms of certain preferred embodiments directed to the detection and treatment of atrial fibrillation and flutter, those skilled in the art will recognize that the invention may be employed in a wide variety of procedures where an elongated lesion is to be formed. Moreover, although individual features of embodiments of the invention may be shown in some of the drawings and not in others, those skilled in the art will recognize that individual features of one embodiment of the invention can be combined with any or all the features of another embodiment. A variety of modifications and improvements may be made to the present invention without departing from the scope thereof.

What is claimed is:

1. An electrophysiology device, comprising:
   a) an elongated shaft having a proximal end, a distal end, and a distal shaft section;
   b) a plurality of tubular coil electrodes on an exterior portion of the distal shaft section, having an interelectrode spacing of about 1 mm to not greater than 3 mm;
   c) at least one temperature sensor on an exterior portion of the distal shaft section, being positioned so that the temperature sensor is disposed between two adjacent electrodes;
   d) a metal band adjacent to and radially disposed about an outer surface of the temperature sensor and shaft; and
   e) one or more electrical conductors electrically connected to the at least one temperature sensor, at least partially embedded and hectically disposed within a wall of the elongated shaft.

2. The device of claim 1 further including a plurality of electrode electrical conductors which are each electrically connected to an individual electrode at a distal end of the electrode electrical conductor and having a proximal end configured to connect to an electrical source.

3. The device of claim 2 wherein the shaft has an elongated core member disposed therein.

4. The device of claim 3 further including a jacket disposed about the core member.

5. The device of claim 4 having the electrode electrical conductors at least in part helically braided into the core member jacket.

6. The device of claim 5 having the electrode electrical conductors at least in part helically braided into the shaft.

7. The device of claim 3 further including a distal tip member secured to the distal end of the shaft.

8. The device of claim 7 wherein the distal tip member includes a coil member disposed about a distal extremity of the core member distal to the shaft.

9. The device of claim 2 wherein the shaft has a lumen extending therein configured to slidably receive a guidewire therein.

10. The device of claim 2 wherein the electrode electrical conductors are helically braided into the shaft.

11. The device of claim 1 further including a jacket disposed on and about the metal band.

12. The device of claim 11 wherein the jacket is in part disposed about a periphery of the two electrodes adjacent to the temperature sensor.

13. The device of claim 4 wherein the jacket is disposed about and in contact with the metal band, and defines an outer surface of the electrophysiology device.

14. The device of claim 11 wherein the jacket is in part disposed about a periphery of at least one of the two electrodes adjacent to the temperature sensor.

15. The device of claim 1 wherein the electrodes are sensing and ablation electrodes.

16. The device of claim 1 wherein the distal shaft section has a maximum outer dimension less than 1.65 mm.

17. The device of claim 1 wherein the metal band is soldered to the temperature sensor.

18. An electrophysiology device assembly, comprising:
   a) a guiding member having an elongated shaft having a proximal end, a distal end, a port in the proximal end, a port in a distal shaft section, and a lumen extending therein; and
   b) an electrophysiology device slidably disposed in the lumen of the guiding member, comprising:
      an elongated shaft having a proximal end, a distal end, and a distal shaft section, and a plurality of electrical conductors helically braided into the shaft;
      a plurality of tubular coil electrodes on an exterior portion of the distal shaft section electrically connected to the electrical conductors, having an interelectrode spacing of about 1 mm to not greater than 3 mm;
      a plurality of temperature sensors on an exterior portion of the distal shaft section, being positioned so that at least one temperature sensor is disposed between two adjacent electrodes, each temperature sensor being electrically connected to at least one of the electrical conductors helically braided into the shaft; and
      a plurality of metal bands on the shaft, so that a metal band is adjacent to and radially disposed about an outer surface of each temperature sensor and the shaft.

19. The assembly of claim 18 wherein the guiding member distal shaft section is shapeable.

20. A method for treating a patient, comprising:
   a) providing an electrophysiology device, comprising:
      an elongated shaft having a proximal end, a distal end, and a distal shaft section, and a plurality of electrical conductors helically braided into the shaft;
      a plurality of tubular coil electrodes on an exterior portion of the distal shaft section electrically connected to the electrical conductors, having an interelectrode spacing of about 1 mm to not greater than 3 mm; and
      a plurality of temperature sensors on an exterior portion of the distal shaft section, being positioned so that at least one temperature sensor is disposed between two adjacent electrodes, each temperature sensor being electrically connected to at least one of the electrical conductors helically braided into the shaft; and
      a plurality of metal bands on the shaft, so that a metal band is adjacent to and radially disposed about an outer surface of each temperature sensor and the shaft;
   b) introducing the device into the patient's vasculature and advancing the device until the distal section of the device is disposed within a chamber of the patient's heart;
   c) placing at least one electrode on the device distal shaft section in contact with a desired surface of the heart chamber; and
   d) delivering high frequency electrical energy to the at least one electrode on the device and measuring the temperature at a temperature sensor adjacent the electrode.

21. The method of claim 20 further including before step (a), providing an elongated guiding member having proximal and distal ends, an inner lumen extending therein to the distal end configured to slidably receive the electrophysiology device, and a port on a distal section in communication

with the inner lumen, and introducing the guiding member into the patient's vasculature and advancing the distal end of the guiding member to a chamber of the patient's heart.

22. The method of claim 20 wherein the patient is treated for heart fibrillation or flutter.

23. The method of claim 20 including placing at least two adjacent electrodes on the device distal shaft section in contact with a desired surface of the heart chamber, and delivering high frequency electrical energy to the two adjacent electrodes on the device, and measuring the temperature at a temperature sensor between the two electrodes, to form a first lesion and a second lesion continuous with the first lesion on the surface of the heart chamber.

24. An electrophysiology device for use within a patient's heart, comprising:

a) an elongated shaft having proximal and distal ends; and

b) a distal shaft section including a plurality of longitudinally disposed tubular coil electrodes on an exterior portion thereof, the electrodes having a maximum outer diameter of about 1 mm to about 1.22 mm and a length of about 2 mm to about 8 mm and an interelectrode spacing of about 1 mm to not greater than 3 mm, at least one temperature sensor disposed on an exterior portion of the distal shaft section between two adjacent electrodes, and a plurality of individually insulated electrical conductors at least partially embedded and helically disposed within a wall of the elongated shaft each electrode and the at least one temperature sensor being electrically connected to at least one electrical conductor.

25. The electrophysiology device of claim 24 including an inner lumen extending within the elongated shaft, configured to slidably receive a device therein.

26. The electrophysiology device of claim 24 including a core member extending within the elongated shaft.

27. The electrophysiology device of claim 26 wherein the electrical conductors are disposed about the core member.

28. The electrophysiology device of claim 24 wherein the electrical conductors form at least part of a wall of the distal shaft section.

29. The electrophysiology device of claim 24 including a source of high frequency electrical energy electrically connected to the electrical conductors.

30. An electrophysiology device, comprising:

a) an elongated shaft having a proximal end, a distal end, and a distal shaft section;

b) a plurality of electrodes on an exterior portion of the distal shaft section; and

c) a plurality of temperature sensors on an exterior portion of the distal shaft section, being positioned so that at least one temperature sensor is disposed between two adjacent electrodes, and each temperature sensor having a conducting member comprising an annular metal band radially disposed about and adjacent to the shaft and the temperature sensor thereon, which transmits heat to the temperature sensor, and a jacket radially disposed on and about an outer surface of the metal band.

31. An electrophysiology device, comprising:

a) an elongated shaft having a proximal end, a distal end, and a distal shaft section;

b) a plurality of electrodes on an exterior portion of the distal shaft section;

c) at least one temperature sensor on an exterior portion of the distal shaft section, being positioned so that the temperature sensor is disposed between two adjacent electrodes;

d) a conducting member connected to the temperature sensor; and

e) a jacket disposed about the conducting member and a periphery of at least one of the two electrodes adjacent to the temperature sensor.

32. An electrophysiology device, comprising:

a) an elongated shaft having a proximal end, a distal end, and a distal shaft section;

b) a plurality of electrodes on an exterior portion of the distal shaft section;

c) at least one temperature sensor on an exterior portion of the distal shaft section, being positioned so that the temperature sensor is disposed between two adjacent electrodes; and

d) a jacket disposed about the at least one temperature sensor and in part disposed about a periphery of the two electrodes adjacent to the at least one temperature sensor.

33. The device of claim 32 wherein the jacket is an electrically insulating material.

34. An electrophysiology device, comprising:

a) an elongated shaft having a proximal end, a distal end, and a distal shaft section;

b) a plurality of tubular coil electrodes on an exterior portion of the distal shaft section having an interelectrode spacing of about 1 mm to not greater than 3 mm;

c) at least one temperature sensor on an exterior portion of the distal shaft section, being positioned so that the temperature sensor is disposed between two adjacent electrodes;

d) one or more electrical conductors electrically connected to the at least one temperature sensor, at least partially embedded and helically disposed within a wall of the elongated shaft.

35. An electrophysiology device, comprising:

a) an elongated shaft having a proximal end, a distal end, and a distal shaft section;

b) a plurality of tubular coil electrodes on an exterior portion of the distal shaft section, having an interelectrode spacing of about 1 mm to not greater than 3 mm;

c) at least one temperature sensor on an exterior portion of the distal shaft section, being positioned so that the temperature sensor is disposed between two adjacent electrodes;

d) a conducting member disposed about an outer surface of the temperature sensor; and

e) one or more electrical conductors electrically connected to the at least one temperature sensor, at least partially embedded and helically disposed within a wall of the elongated shaft.

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